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ಕರ್ನಾಟಕ ಪ್ರೌಢ ಶಿಕ್ಷಣ ಪರೀಕ್ಷಾ ಮಂಡಳಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560 003

KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD, MALLESWARAM, BANGALORE – 560 003

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S. S. L. C. EXAMINATION, MARCH/APRIL, 2019

ಮಾದರಿ ಉತ್ತರಗಳು

MODEL ANSWERS

ದಿನಾಂಕ : 02. 04. 2019] ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E (Bio)**

Date : 02. 04. 2019] **CODE NO. : 83-E (Bio)**

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಜೀವಶಾಸ್ತ್ರ / Biology)

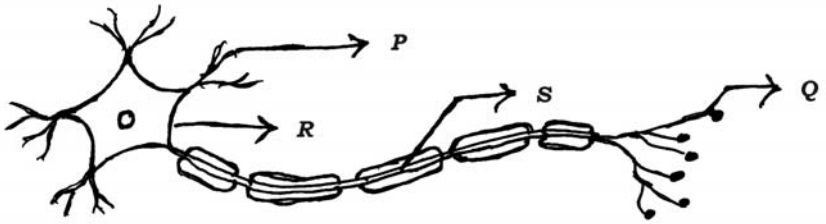
(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ / Private Fresh)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

[ಗರಿಷ್ಠ ಅಂಕಗಳು : **100**

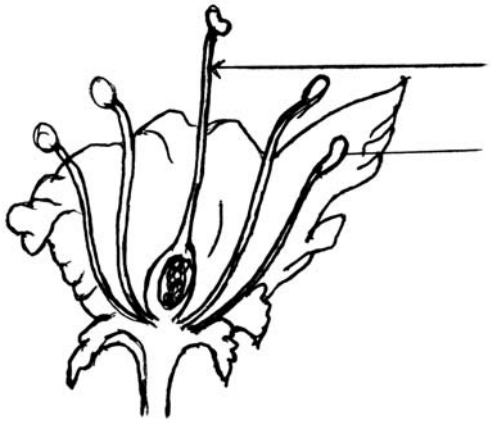
[Max. Marks : 100

Qn. Nos.	Value Points	Total
3.	The correct path of the movement of nerve impulses in the following diagram is  (A) $Q \rightarrow S \rightarrow R \rightarrow P$ (B) $P \rightarrow Q \rightarrow R \rightarrow S$ (C) $S \rightarrow R \rightarrow Q \rightarrow P$ (D) $P \rightarrow R \rightarrow S \rightarrow Q$ *Ans.* : (D) — $P \rightarrow R \rightarrow S \rightarrow Q$	1

Qn. Nos.	Value Points	Total
6.	By constructing Khadin check-dams in level terrains, (A) underground water level decreases (B) underground water level increases (C) vegetation in the nearby areas are destroyed due to excess moisture (D) underground water gets polluted *Ans.* : (B) — underground water level increases	1
9.	Part of the flower that develops into fruit and part of the seed that develops into root respectively are (A) ovary and plumule (B) plumule and radicle (C) ovary and radicle (D) ovary and ovule *Ans.* : (C) — ovary and radicle	1
10.	A pure dominant pea plant producing round — yellow seeds is crossed with pure recessive pea plant producing wrinkled — green seeds. The number of plants bearing round — green seeds in the F_1 generation of Mendel's experiment is (A) 0 (B) 1 (C) 3 (D) 9 *Ans.* : (A) — 0	1

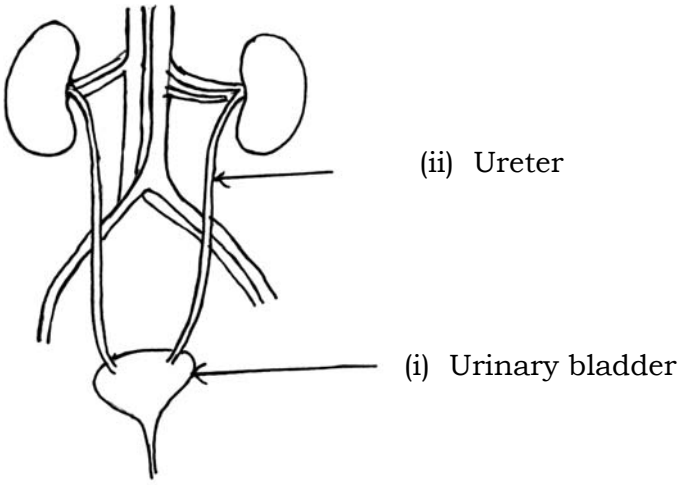
Qn. Nos.	Value Points	Total
11.	The functions of hormones are given in **Column-A** and the names of the hormones are given in **Column-B**. Match them and write the answer along with its letters : ***Column - A*** ***Column - B*** (A) Prepares the body to deal with the situation — (i) Growth hormone (B) Regulates metabolism for body growth — (ii) Testosterone (C) Regulates blood sugar levels — (iii) Adrenaline (D) Regulates the growth and development of the body — (iv) Progesterone (v) Insulin (vi) Thyroxine (vii) Oestrogen. *Ans.* : (A) — (iii) Adrenaline (B) — (vi) Thyroxine (C) — (v) Insulin (D) — (i) Growth hormone 4×1	4
13.	What are fossils ? *Ans.* : The preserved traces of the living organisms are called fossils.	1

Qn. Nos.	Value Points	Total
18.	Under what condition lactic acid is produced in the muscle cells ? *Ans.* : Lactic acid is produced when there is lack of oxygen in the muscle cells.	1
21.	Explain the process of translocation of food materials in plants. OR Explain the process of digestion in the small intestine of man. *Ans.* : ★ Translocation of food materials occurs in the phloem tissue of plants. $\frac{1}{2}$ ★ This process takes place in the sieve tubes with the help of adjacent companion cells both in upward and downward directions. 1 ★ This process is achieved by osmotic pressure. $\frac{1}{2}$ OR Digestion of food in small intestine : ★ Small intestine is the site of complete digestion of proteins, carbohydrates and fats. $\frac{1}{2}$ ★ Glands present in the walls of small intestine secrete intestinal juice. $\frac{1}{2}$ ★ Enzymes in the intestinal juice convert proteins into amino acids, complex carbohydrates into glucose and fats into fatty acids and glycerol. $\frac{1}{2}$ ★ Digested food is absorbed by the villi present in the walls of intestine. $\frac{1}{2}$	2 2

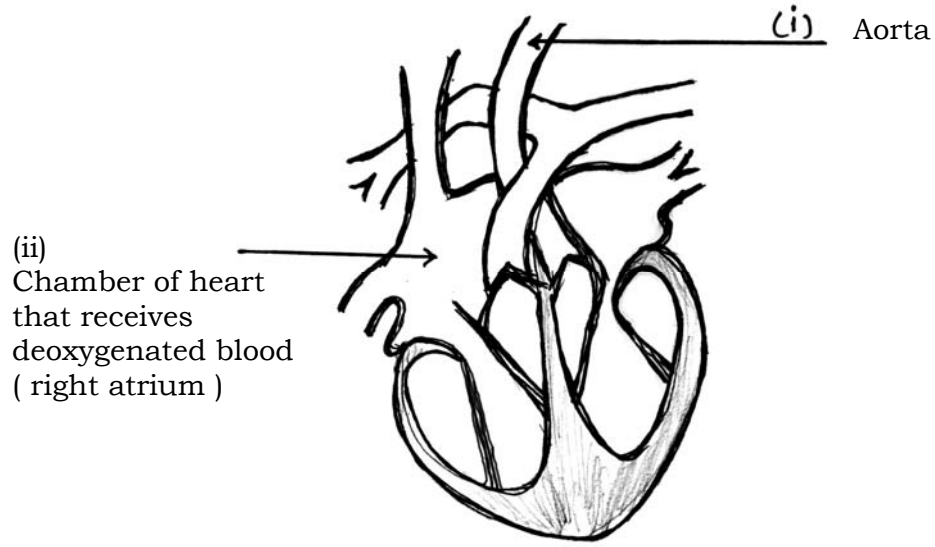
Qn. Nos.	Value Points	Total
24.	Draw the diagram showing the longitudinal section of a flower. Label the following parts : (i) Style (ii) Anther. *Ans.* :  Longitudinal section of a flower. $1 + \frac{1}{2} + \frac{1}{2}$	2
27.	List the disadvantages of using fossil fuels. OR List the advantages of 'reduce' and 'reuse' to save environment. *Ans.* : ★ Fossil fuels are formed from biomass which contains hydrogen, carbon, nitrogen and sulphur. $\frac{1}{2}$ ★ When these are burnt, the products are oxides of carbon, water, oxides of nitrogen and oxides of sulphur. $\frac{1}{2}$ ★ Oxides of nitrogen, oxides of sulphur and carbon monoxide are poisonous at high concentration. They may lead to acid rain. $\frac{1}{2}$ ★ Carbon dioxide is a greenhouse gas. When its concentration in the atmosphere increases continuously, leads to intense global warming. $\frac{1}{2}$ OR	2

Qn. Nos.	Value Points	Total
	Advantages of reduce and revise to save environment : *Reduce* : By the practice of 'Reduce', we can save (a) Electricity (b) Water (c) Food (d) Natural resources. $\frac{1}{2} + \frac{1}{2}$ *Reuse* : By the practice of 'Reuse' (a) Environment pollution can be controlled (b) Materials are available for immediate use (c) Energy can be saved (d) Use of raw materials can be minimised. (Consider other related ans. also) $\frac{1}{2} + \frac{1}{2}$	2
30.	Growth of thread like structures along with the gradual spoilage of tomato can be observed when a cut tomato is kept aside for four days. Interpret the causes for this change. *Ans.* : ★ The thread like structures that grow on the tomato are hyphae of Rhizopus (Bread mould) $\frac{1}{2}$ ★ They have blob like structures called sporangia $\frac{1}{2}$ ★ Sporangia contain spores, they reproductive structures $\frac{1}{2}$ ★ When spores come into contact with moist surface, they begin to grow $\frac{1}{2}$ Therefore cut tomato gets spoiled gradually.	2

Qn. Nos.	Value Points	Total
33.	A food chain in a polluted aquatic ecosystem is given. Observe it and answer the following questions. Fresh water → Algae → Fishes → Birds. (i) Which organisms are disturbed more due to biomagnification ? Why ? (ii) This ecosystem will be destroyed gradually due to biomagnification. Why ? OR A student places a piece of cucumber, a glass piece, a banana peel and a plastic pen in a pit and closes it. What changes can be observed in these materials after a month ? Give scientific reason for these changes. *Ans.* : (i) ⋆ Birds are disturbed more due to biomagnification. $\frac{1}{2}$ ⋆ As the birds occupy the top most level in the given food chain, the maximum concentration of harmful chemicals causing bio-magnification get accumulated in their body. $\frac{1}{2}$ (ii) ⋆ Biomagnification is the process of accumulation of non-degradable chemicals in the various trophic levels of food chain. $\frac{1}{2}$	

Qn. Nos.	Value Points	Total
	★ As the chemicals are non-degradable or cannot be washed, they cannot be removed from the organisms of the food chain. This leads to gradual destroying of the ecosystem. $\frac{1}{2}$	2
	OR	
	★ Cucumber piece and banana peel are organic substances. $\frac{1}{2}$ ★ They are biodegradable substances, and are ecofriendly. $\frac{1}{2}$ ★ Glass piece and plastic pen are inorganic / synthetic substances. $\frac{1}{2}$ ★ They are non-biodegradable substances and cause soil pollution. $\frac{1}{2}$	2
37.	Draw the diagram showing the structure of human excretory system. Label the following parts. (i) Urinary bladder (ii) Ureter. *Ans.* :  Human excretory system. $1 + \frac{1}{2} + \frac{1}{2}$	2

Qn. Nos.	Value Points	Total
40.	Explain the function of auxin hormone. *Ans.* : When growing plants detect light, auxin is synthesised at the shoot tip and it helps the cells to grow longer. When light is coming from one side of the plant, auxin diffuses towards the shady side of the shoot. This concentration of auxin stimulates the cells to grow longer on the side of the shoot which is away from the light.	2
44.	Name the type of asexual reproduction that occurs in the following. (i) Pomegranate (ii) Hydra (iii) Planaria (iv) Plasmodium. *Ans.* : (i) Pomegranate — Vegetative propagation $\frac{1}{2}$ (ii) Hydra — Budding $\frac{1}{2}$ (iii) Planaria — Regeneration $\frac{1}{2}$ (iv) Plasmodium — Multiple fission. $\frac{1}{2}$	2

Qn. Nos.	Value Points	Total
47.	Draw the diagram showing the sectional view of the human heart. Label the following parts. (i) Aorta (ii) Chamber of heart that receives deoxygenated blood. *Ans.* :  Sectional view of human heart. $2 + \frac{1}{2} + \frac{1}{2}$	3
52.	(i) Write the differences between homologous organs and analogous organs. (ii) Write the differences between the sex chromosomes of man and sex chromosomes of woman. (iii) Sex of a child is determined by the father. How ? *Ans.* :	

Qn. Nos.	Value Points	Total

(i) Differences between homologous organs and analogous organs

Homologous organs	*Analogous organs*
★ Organs of different organisms have common origin	★ Organs of different organisms have different origin
★ They have similar structure and perform different function	★ They have different structure and perform similar function
★ Ex : Forelimbs of frog and forelimbs of bird	★ Ex : Wings of bird and wings of bat.

(any *two* differences) 1 + 1

(ii) Woman has a perfect pair of sex chromosomes, both called *X*. $\frac{1}{2}$

Man has a normal sized chromosome *X* and another short sized chromosome *Y*. $\frac{1}{2}$

(iii) A child who inherits *X* chromosome from her father will be a girl and a child who inherits *Y* chromosome from his father will be a boy. Both the girl and the boy inherit only *X* chromosome from the mother. Therefore sex of a child is determined by the father. 1 4